



Command and Control in Virtual Environments: Designing a Virtual Environment for Experimentation

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What is a Virtual Environment?

- Customizable platform for interaction
- Synchronous and persistent network
- People are represented as avatars
- Flexibility of usage



Setting up ELICIT for Virtual Environments

- ELICIT: multiplayer online game
 - Counterterrorism intelligence domain
 - Like game *Clue*: ID fictitious terrorist plots
- Used for C2 experimentation
 - Examine org forms, learning, trust, culture, others
 - Very thin, textual interface
- Interested in extending into immersive VE



Virtual World Experimental Criteria

- Accessibility
- Communication
- ELICIT Specific Requirements
- Customization

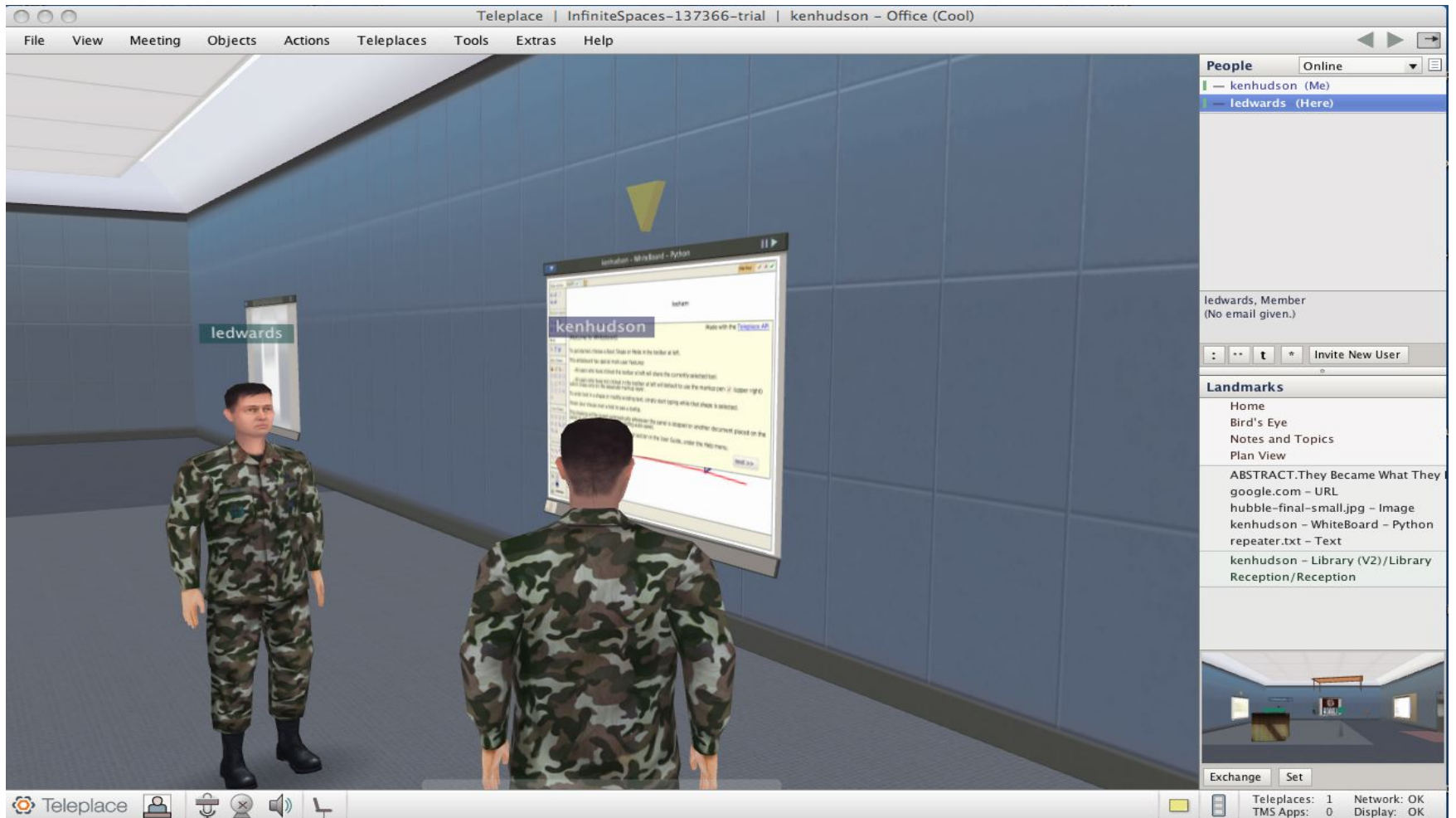


Second Life/Open Sim





Teleplace





O.L.I.V.E.





Protosphere

PROTOSPHERE File Locations Tools Help

Welcome Center Solutions Center Social Networking Courseware Users Dashboard

LOCATION: SOLUTIONS CENTER

COMMUNICATION PANEL

INFORMATION

TEXT CHAT

Public

Send **B** *I* U Chat to: Public

EXPRESSIONS

Agree Disagree Raise Hand More Expressions

AUDIO CONTROLS

Speaker Microphone Threshold Mute Speak Lock



Design Implication for VE Game-play

- The ELICIT game-play will not take place in an environment as a discernable place
- Participants experience themselves as present within that space, and co-present with the other participants



Neutral space prototype





Realistic Space changes emotion





Design elements to support Neutral Valence

- Interior space only free from natural world complexities
- Subtle texturing of spaces
- Constant ambient lighting
- Narrow range of environmental stimuli

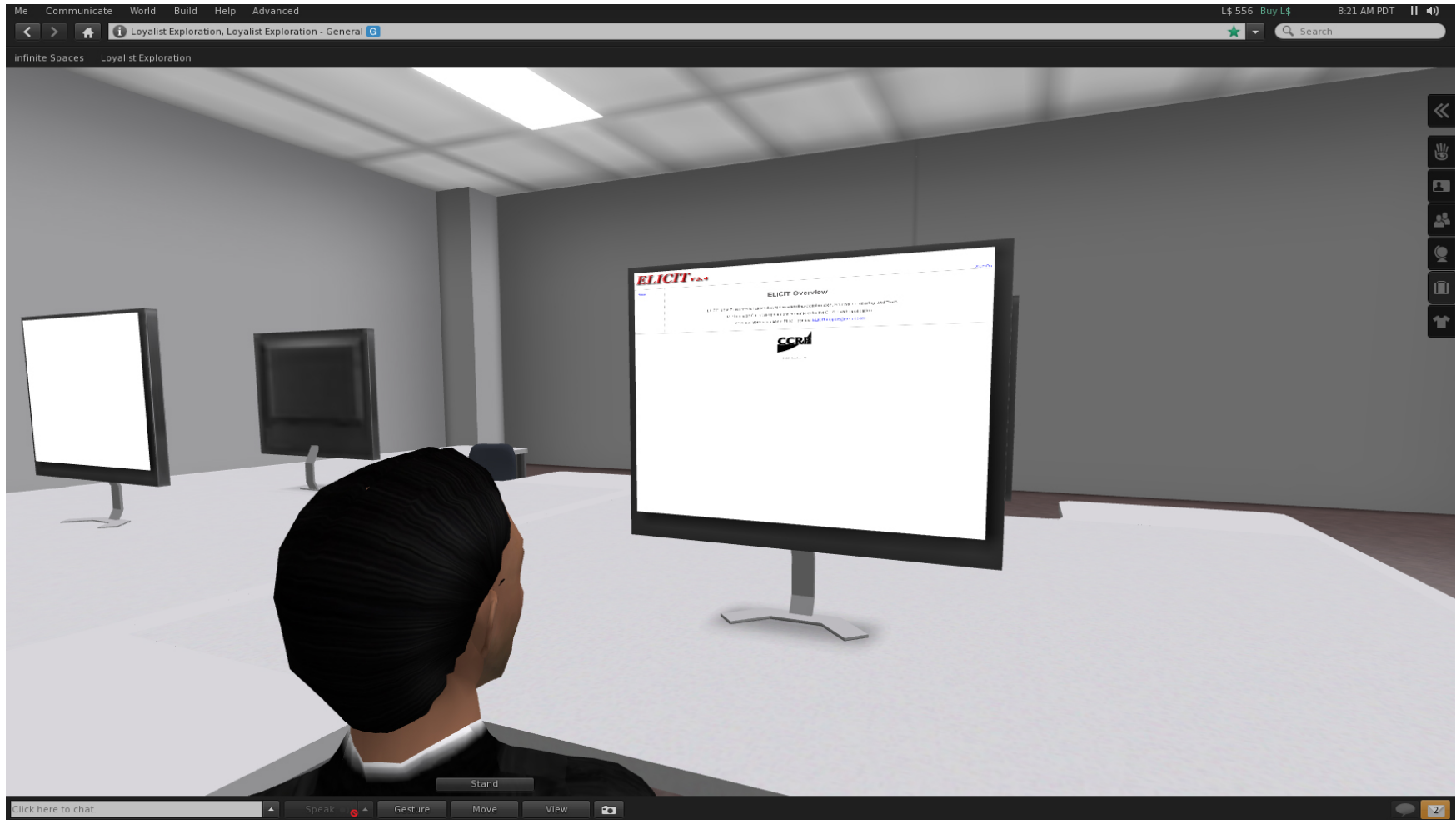


Hybrid Room





Second Life Viewer 2.0





Status and Plans

- Current status
 - Prototype beta version developed
 - Used for preliminary experiment in May
- Future work
 - Continue development to improve experience
 - Expand game-play
 - Examine abELICIT agent-avatar integration